Coll
729(D)
III -7
1950

RECORD

Notebook
of
H R Roberts

on

Field and Lab. Data
of Skiing area
on malaria project of PHAS

May 27 — June [26]
1950

Left Wdg. May 17 9AM EST
via Iceland - Prestwick -
Amsterdam - Rome May 18, 1400
visited LPR
left Rome 0130 May 20
via Istanbul to Tehran
1400 May 21
Left Tehran May 25 to Isfahan
in morning
Left Isfahan May 26 via
Abadan to Shiraz

May 27th Dekorah

with Houshi & med. student

To Masjed-Bardi (village)
about 4 km N.E. of Shiraz
for ent. survey

visited about 7 houses
during 1½ hours search only
1 large collection brought
relating in water barrel

1 culex class house and
shallow tank and ditches
for irrigation of large garden
no larval found

Examined stairway down to
damp cistern - negative

Went to south edge of village
for stagnate water pools with
floating pieces of green algae
also edge of tiled - no larvae

According to Houshy he visited
this village with Dr Dowr in
September 1977 and found
adult Anopheles common

Malaria said to be serious
during middle of summer.

May 28

With Houshi + 3 med students + Dr. of malaria unit

Road to Persepolis & Sugar-Factory & Bandamir. then south east toward Fez-a-bad & Firuzi - Road poor & lost time in getting directions - road became very poor

Stopped at farm called Caroden about 12 km before Fezabad.

Adults in cow sheds 1 Anoph. & 6 or 7 Culicines

Country very level and much irrigation - a culicine larvae found common in a few places also adults flying on shaded path by ditch

Population about 150 - malaria said to be chronic with attacks throughout the year.

Spleen exam & blood smears made of 40 or 50

May 29
with Rafajo (Housby)
After lunch went South 18km
to Pole-fata then branch
to right S.W. 12km to Army
Fort near Baba-hoji then to
left N.W. to Dekuk about 4 km.

No larval found in ditches at
Pole-fata, but returning stopped
at pool by bridge and found
larval in small numbers.
In reeds and floating dead weeds.
proved to be A. sacharovi

At fort a large spring
with high reeds. Found
about 50 larval in small side
pool - accidently lost - only one
larva found in vegetation of
spring. A few adult culicines
in nearby house. Rafajo looked
for adults in fort - nothing.

At Dekuk - no larval in
large pool & ditch. Adult
culicines and 1 Anopheles superpictus
after examining 10 houses

Soldiers in Fort said malaria
usually began in 2 weeks

of 14 slides examined by
girl in lab – all negative

May 30

To Shahryar with Dr. Dehkan and 5 med. students. Spray team began their program here today. Town about 3 km E of Shiraz. Students understand but very little know how. Made 43 splen & blood smears. Not much time for ent. survey.

Examined 3 houses - a few culicines only. Saw one very deep well in house yard.

Examined bottom of ramp at abandoned irrigation well. Walls damp. Found moderate number of culicines and 1 A. superpictus.

Podonok

May 31

Visited village just beyond Shahrjon by the name of Podonok with Dr. Dehan, ward & Dr. + 4 Med. S.
A large village no water in village except large tank in garden with many Gambusia Outside several large ditches with weeds & algae along edge. Also about eight wells for irrigation of truck gardens. Most wells had sun at bottom of ramp examined 1 that was moderately shaded - no moss. No larvae found in ditches. Examined eight houses in village & no mosq. found.

Spleen & smear survey very poorly organized Dr. [illegible] examined 20 15 positive. Dubious as to whether blood smears adequate because of technique.

Said to be very little malaria here.

June 1 Kaftarak
Visits Dr. Dickson Dr. Kevanfar
& 4 med. students
Count SE about 10 km along
NE edge of valley to area
of rice cultivation.
Splen palpation about 35
Blood smears about 30
Anopheles resting in cowsheds
very numerous in great
contrast to previous localities
Examined rice fields
briefly near town was only
able to find 3 third instar
Anoph. larvae
Some what? rice nearly mature
in dry fields. Other areas
with rice 8 in high or just
flooded with no rice growing.
Population of town 400
Malaria said to occur
in summer & autumn
beginning in about 10 days.

31 Anopheles sacharovi in 2 cowsheds
~~+ Anoph ? small dark wing~~
1 superpictus in cowshed

10♂ 1♀ Eupsophus on open ground
2♀ small pyrgomorphs
10♂ 1♀ acridine 2♀ small pyrgom.
went up into mts. and
into green circular high
valley no apparent outlet
Paved village with large
spring welling out from Mt.
crossed this and up to
highest pass to Bustheire
about 75 km from Sierra
and about 10,000 ft. Small
scattered oaks 5'-10' ft.
high. Rocky bare ground
low scattered boulders. Sta #3
just East of pass. 1♀ Dactloid
picked off ground. 1♀ "Rehn's group"
about 5' ft up in oak found
by J. Roy Young. 2♂ Eupsophus.
several sp of Acridine, 1♀ orthoptera Pam.
East of pass near
floor of "green valley" much
vegetation but few hoppers
10 orthoptera pamphag. 1♂ Eupsophus
Sta #4

Orthoptera

Friday June 2

went with Roy west on Rd. to Buchiri, Crossed Shiraz Valley and up into first ridge about 4500 ft. feet. Stopped near top low scattered bushes Sta. #1

1♂ Gryllus ——? Katydid family up in low bush very conspicuous. extruded in enormous amount of brown liquid. Believe it had been stridulating - a loud scratchy hiss.

5♀ 7♂ Pamphagid (Eremtes) in low thorny bushes 1 pair in copula. - 1♀ low crest pamphagid on bare ground. 1♀ Eupharyphas? on bare ground. - 5♂ veiled red wing oedipod. fairly common

5♀ 3♂ blue wing oed. common

3♀ 1♂ Acridine

Over ridge went about 10 miles up river valley just after leaving river stopped to help motorcycle. Sta. #2 Hill side with low scrub and some bushes 7 or 8' high

June 6 4 H reporters emerged
in cube from rice field.

June 3 Sultanabad

With Dr. Korenfar 4+ med students, pop. 10000. S/slear & blood smear about 50 of former 40 of latter. Examined 5 or 6 cold sheds 1 A. superpictus. Also looked at butt & well

Went some 8 km to SW. to marsh. Almost completely dried up. Clear flowing water in large ditch, no larvae

Returning to Sultanabad examined 4 or 5 cow sheds at Jareskond (or Caresban) - no mosquitoes.

About 1 mile or less ~~visited~~ from Sultanabad visited some rice beds - rice about 8' high in water. Anopheles and a small culex common along grassy edge.

These rice fields are the only place where Anopheles have been consistently found. Irrigation ditches, side pools with algal & springs seem to be devoid of mosquito larvae. Some culicines are found occasionally in large numbers in foot prints or temporary small pools. Gambusia and other fish, crustacea and predatory insects seem to prevent mosquito breeding in the above situations. But very few fish and crustacea seen in rice paddies.

reared 1 A vaccinator + 17 superpictus from rice fields

June 4 vicinity of Kaftarak
with 2 med students, Nigahdary
& Mahalotti - looking for larvae.
Stopped at large spring-
cool clear water about 1 mi.
west of Kaftarak. High reeds
and other vegetation. Many
small fish and crustacea.
Got no larvae.
A short distance beyond
spring walked down to
rice fields. Rice planted
in some of the paddies about
8 in. high. Ready for
transplanting? The other
paddies which were recently
flooded. Anopheles & culex
present, but not in any
great numbers
Went several km. beyond
Kaftarak to rice fields again.
Found 1 Anoph in reeds of
main ditch. Anoph. not
common. seemed to prefer
shady side of dikes in thick
grass. Anoph & culex present
but hard to find.

Rice in seed beds said to have been planted 30 days ago about 8" high. Will be transplanted at end of June Harvested at "end of summer". Flooded with water continuously until harvested.

1 A superficies emerged grain & not preserved as in poor condition

Unit II A. paniculata

2 A. superficies

Earwax superficies ?

purpose ?

June 5 Sheik-abood

With Dr. Kouznetzov, Ds —
Ugaldary & Sulaimieh - took
about 1½ hrs + 20 min. to Sheik-abood
in District 3 - Passed thru Laphis
(DDT-1949) many well about,
but rice field if any would
be far from road.

At Sheikabood made spleen
& blood survey.

Adult A. jeyporiensis moderately
common in houses. Took two
A. superpictus.

Source of water from large
ditch running thru town. Other
Ditches also ran by village
out to fields for irrigation.

Sampled briefly in ditches
no larvae found.

Rode about 1 mile out on
plain to rice fields. Found
some larvae Anoph in rice
seed beds. Also sampled in
some flood pools in grass - negative

June 6 Kharjul

Worked in lab and wrote up notes most of the day.
Wife Rafajat went to Kharjul about 6 PM - village to west of Kaftarak surrounded by rice fields.
About dusk began collecting biting records from boys. Noted large number of mosquitoes swarming in toilet room off yard of head man. Collected here and on steps up to roof for about ½ hour. Noted many biting as many shortly, shied away from flashlight
Caught 4 A. sacharovi
2 Culex
between 7:00 - 7:30 P.M.
People slept on roofs at night
Roy Young noted that they had begun to transplant rice here the next day

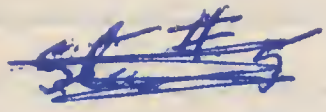
June 7 Kheranmek Zone 2

With Dr. Kevorfar about 3 hrs by jeep said was 80-90 km. Over low pass to East down long valley out over very large desert plain - 5 or 6 antelope, desert fox, quail.

Quite sizeable village about 5 km from rice fields and extensive wet marsh. Most houses had a small well in their yard about 30' deep. Collected 3 species of Anopheles - Sacharovi, superpictus + sp? in cowsheds.

Kevorfar acquired about 60 for spleen enlargement. I took about 12-15 slides of those who said they had malaria at the time.

Went by jeep to rice fields. Found no larvae in fields - they were just transplanting the rice and much disturbed. Could not get to seed beds. No larvae in flooded short grass around marsh.



June 8 Dekorah

Visit ~~Rafajo~~ Vafaie to garden several Km N. of Shiraz.

Examined fountains ~~and~~ or cisterns or tanks in garden of Mr. Khalili - said to be best garden in Shiraz. Most fountains or pools had fish & no Anophs. One small pool in greenhouse had 1 A. sacharovi 1 A. (Myzomyia) sp. larvae. A semi shaded pool had several early instar A. sacharovi larvae among lily pads

Examined several other gardens but found almost no fountain pools or tanks & no larvae.

Went to village visited before, May 27, found 2 early instar A. sacharovi larvae in overflow pool from ditch. Examined ~~several~~ several pools no Anophs. One large fountain pool in large room of house filled with Aedes larvae & pupa, not aegypti. Could find no adults in cool sheds as before.

Sta #5 Several stops
near top of first
Pass E
Barkine about 25 km
W. of Shiraz about
same as Sta #1

Orthoptera

June 9 Friday Bushire Rd.

with T. Rod Young in jeep to first position road to Bushire. Left about 8:30 & returned about 1:30 PM. Collecting rather poor though got several species not seen before. Only found one pamphagid. Found a slender winged mantid with feathered antennae?!

Also large slender, long legged Tettigoniid, not adult, did not bite, bit my finger hard enough to draw blood

Locusta just maturing, very common along stream in grass

Many species in this area just maturing.

~~Collect~~

Large oak trees 1'-2' in diameter up pass and sides of mountain in savanah forest.

Collected hoppers at lower end of pass in low desert vegetation.

Returning took guide and went on North side of valley

Banadh	3:40	0 km
Mojdabad	5:35	43 km
Polekan	6:10	56 km
morning turn off from main road	6:30	72 km
Shiraz	7:15	100 km

3 hr. 35'

To visit Abiabad it would take 2-4 days.

June 10

Dr. Ciuquinto, M. Malaria Advisory mission to Pirin

Tonjul clear pool algae - sacharovi ? Farm & prepar

" stagnate ditch sacharovi

" adults collected 2 ♂ sacharovi

Dr Stuart 6 (Aliabad)

June 10 N W end of Zone 3

With Dr. Kavanfar in attempt to visit Aliabat.

4 hr 5'	Left Shiraz	7:15	0 Km
	Sheshabund	8:45	46 Km
	upper end of Valley	10:50	84 Km
	Banash	11:20	92 Km

Presented letter to person there through Dr. Gorbon. Had lunch in garden. Said no malaria there till autumn - rice 1 km from here 3 persons turned up for medication saying they had malaria.

Got stuck twice in station wagon with mud & pushed out by jeep.

Took jeep forward to Aliabat went 14 km to rd up pass then 10 km up to top of pass. Road became very rough and said to not possible beyond Aliabad said to be 15-20 km. beyond top of pass. Possible to get horses at Banash.

Crospirulo
Kuekulak - adult
soharovi ~~stratz~~ Culex
superpictus

~~Ana~~ Ahmadabad

June 11 ~~Ahmadabad~~ h ?
with Jones & Dr. Kanungo
went to Ahmadabad in very
few adults secured sodiaroi
& superpictus only found by
Jones, Rafajo & self
Made 25 blood smears

Went to Salt Lake via
Palehan. collected 2 sodiaroi
& Culex resting in cave
Collected larva in

Adults found in
about 6 cowsheds + 1 room

24 tadpoles
1 d'Urbi
1 stevensi ?
1 ~~sylvaticus~~ ? ?

Jones had a specimen of
hyrcanus from swamp —

Oldrop #7

Kushkbidak

June 12 Kushkbidak

With Jones - To Polefasa then rt. to military post took rd to Delak and then on up along nrs passing Zafarabad and stopped at Kushkbidak. At north side grape vineyard and figs. Examined cowsheds and living quarters found Anopheles common collected about 7 in one cowshed also several in living room.

Rather shallow wells present in each yard about 15'-20' deep. Dipped with bucket and got Culex & Aedes larvae but no Anophs.

Visited marsh about 2 km from village found A. sacharovi fairly common at edge of pools especially on shady side against reeds.

Said to be road directly back to Shiraz to north, but had to return same route with soldier guide

Larvae from marsh
hyaeanus
sacharovi
Larva from rice field
Thyzomyia?
reared 9 sacharovi
4 superpictus
majority of larvae reared to be superpictus
Adult cowsheds
11 sacharovi
3 superpictus

Outlet of rice field

(Kuftarak visit) (Jarisband)

Jan 13 Below Sultanabad

With Jones tried to find a crossing from Sultanabad to Polebrauje with no success. Marsh intervening. Collected in marsh - larva hyreanus & sacharovi.

Examined Jarisband below Sultanabad for adults

11 sacharovi 3 superpictus.

Examined rice field between Sultanabad and Jarisband (see June 3) No larvae present in grassy edge where they were found previously common. & pupae

Found larvae common at corner of rice paddy where water was gently flowing into next paddy.

Mysgomia & Culex

With Jones & Rafajs at 6 PM to cemetery close to rice fields about 1 mi below Kuftarak - between 7:15 - 7:50 collected 10 sacharovi & 7 Culex on my legs.

On Top #8 June 14

Left at 6 PM with Jones & Gribbin (British Consul) top Sugaun River Valley. Road is Bivouac and collected after dark. 6000 ft

14 Tropidaulax up in up in low Euphorb.

4035 Cryllacrids at top of low bushes - grey?

Winged decticid common especially near tall grass & in water.

Short wing grey decticid also fairly common near marsh grass.

small grey green & white pompiloid? in green spiney bush.

Except for a few gryllids nothing singing.

Heteropterid Nurmchonid? resting like a dragon fly on spear of tall grass

June 14 Zafarabad

With Jones to Zafarabad via Polelhan & Babalaji

Stopped at side pool of ditch with grassy edge and floating algae & weed. collected larvae and pupae sacharovi & a Megzomia

At Zafarabad resting adults very scarce must have been more distant from marsh than Kashkbidak. wells in many house yards about 20' deep - seemed deeper than at Kashkbidak collected a few sacharovi and 1 superpictus

reared
- 2♀ sacharovi
- 1♂ "
- 3♀ superpictus
- 1♂ "

Adult resting
- 2 sacharovi
- 1 superpictus

June 15
Lab & rodeo & letters
Dinner Dekan
June 16
Visited Persepolis
June 17
June 18 shopping - night train packing
Mon. June 19 12:30 to Isfahan Tehran 4:30
Tues June 20 Tehran
Wed June 21 "
Thurs June 22 to Chalus

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orthoptera. - found in small clusters of drift wood.
Up river gorge - heavily wooded beech, acacia, box, box elder - 2 juv. dactiids, 1 juv. pseudophyll. Also shelled quails under chips of wood.
swam in torrent pool
watched rice mill in operation.

Prov. of Mazoundaran

Fri June 23 Chalus

With Daphne & Charles Garrett-Jones about 15 km E. of Chalus. Low scrub along rd. flood pools - Anophs in grassy bits few 4th instar larvae no Aegyptia. Mts about 1 to 2 km. back from shore road. Marsh, rice fields between rd and mts. Large 4th instar A. maculipennis? larvae taken in rice fields - most easily found where water is running out of paddy. Jones took one adult A hyrcanus from dark up wooded gorge with river torrent - Exhausted and shed about 50+ A. maculipennis in one corner - made loud buzzing noise when disturbed. In house 15-20 A maculipennis under small shelf in house, Jones found 1 A. hyrcanus in house.

Orthopt. early in season adult in scrub near shore several sp of oedip. but still many immatures - larvae

of the nozzles were operating like a garden ~~hose~~ hose. DDT residual on walls quite visible. Like very thin white wash.

Widely scattered houses ~~made~~ with few roads made operating difficult.

Lunch at Rayar

Visited another spray team at about 15-20 km E of Shasawar. Village on highway near shore of Caspian. Unsprayed houses on beach side had only small numbers of Anopls. Houses to north (inland) had more Anopls but not in great numbers. These houses or whole village was said to have been sprayed last year. Nearest rice field said to be 200 to 300 meters away.

Much time lost in getting spare inner tube. Had swimmer, quite rough

Prov. of Bilan

Sat June 24 Shalamar etc

With Charles G.J. left Chalus about 8:45 to Shalamar met Dr. Bahar-Nuri & others - visited Khoban Razgah about 3km N. of Shalamar - small village sprayed with W.W. DDT about May 1 (24/2/9) almost no Anopheles in houses though surrounded by rice fields in which there were many larvae (hyrcanus?) probably A. maculipennis.

→ Visited spray team operating on small clusters of houses in large rice growing area. The rooms were swarming with A. maculipennis. Have never seen such enormous numbers.

DDT being used - 50 W.W. Rich. Chem. order no. 630/01 no. 1644 - vial dipped out of mixing barrel perspatula to bottom of vial in less than 3 minutes - all of soap?

Sprays pumps viewed in good condition, but most

Baba Rajeb (12 km W. of Shalamar)

Near top of dryer part of hill on flat ground many low sparse vegetation were small patches or areas where 2nd instar ~~th~~ Colaptes were in tremendous numbers or swarms.

Dist of Kalardasht

Sun June 25 Hasan kief

1 hr up road from Chaleus to Tehran then to west 20 km near Hasan kief. Stayed in vacant house near half completed hotel built by Reza Shah. Wheat growing in valley; slopes of hills to north heavily heavily wooded. Quite chilly at night - cool at mid day

Climbed dry hill behind house - 3 hours On slopes much bare ground and many very low clumps of desert vegetation. Am Orphulella like hopper & pamphids 10 ♂ 1 ♀ only mature Orthops. 1 immature winged dictyids catantops, grounds mantid and oldipodids seen.

At top of hill browsed scrubby oak, beech hawthorne, Cornus. Saw large black thrush.

Saw 5 or 6 sp. of lizzards

Jones visited small village
Volcon on map or pronounced
Volket by the inhabitants.
Several large limestone springs
in vicinity. He found maculipennis
very numerous in a stable and
fairly numerous in houses.
He found all clavigers in
marshy bit and in a more
stagnant ditch apparently
mostly maculipennis & some
clavigers.

The day has been
heavily overcast - damp and
quite chilly - Yesterday was
overcast only in afternoon.
Heights nrs. to south have
much snow on them. Wheat
in valley and lower slopes
mostly mature and being
harvested. Upper slopes still
mostly green.

Availability of food at
bazaar very poor.

Dist of Kalardasht.

Mon June 26 Rudbarak-Kalar-Vahet? Vohor?

Up to S E head of valley at end of road, small village Rudbarak
Found 15-20 maculipennis resting in a living room of house. Jones found others. Found a culicine and cleviger in marshy bit - low grass & weeds from overflow from ditch. Seemed to stick more to grass & vegetation than (radcrovi & hyrcanus at Shiraz) maculipennis. Water very cold no algae.

Went to what appears to be remains of old town - raised area in middle of valley - said to be or have been Kalar. Seepage area on north side. Small pool 3' in diam with grassy edge took 3 4 inch maculipennis and one of cleviger. Another spot more dense vegetation, clear water a series of cleviger only.

Noted great swarms of Catantops on dry cultivated parts of valley. Went up dry hill for Orthopt. Found nothing of interest.

Key for the determination of adult females of the genus Anopheles of Iran. (A few of the species

1 Rice field, Sultanabad June 3

2 Rice field, W. Naftlansk June 4

3 Rice field, Sultanabad June 13 Allyzonujia
marsh sacharovi & hyrcanus

4 side pool of ditch, beyond
Polefara June 14

Prof. Dr. Mario Cicaquito

WHO

Ministry of Health

"Dr. Palenquist